



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

T H E

AMERICAN NATURALIST.

Vol. II.—NOVEMBER, 1868.—No. 9.



ON THE FRESH-WATER SHELL-HEAPS OF THE ST. JOHNS RIVER, EAST FLORIDA.

BY JEFFRIES WYMAN, M. D.



[Concluded from page 403.]

II. ARTICLES TAKEN FROM THE SHELL-HEAPS, SHOWING HUMAN AGENCY.

Pottery. In the old world no traces of pottery have been found associated with the earliest flint-implements, and it is therefore concluded that the men who wrought these were ignorant of it. When the European first came to America, some of the tribes were found to be destitute of this art. The Patagonians had no earthen vessels either for cooking or holding water. Instead of such the Esquimaux used wooden bowls, and the natives of the North-west Coast, Oregon and California, water-tight baskets, substituting heated stones for the direct action of fire. But with few exceptions pottery, as an art, was practised by a large majority of the tribes.

If, as daily experience tends to show, man, when first introduced upon the surface of the earth, was at best a pure savage without experience, it follows as a natural consequence that there must have been a longer or shorter time when instruments were unknown to him. We have no adequate grounds for any other belief, than that his knowledge

and his inventions have been progressively developed, and analogy, as we think, legitimately suggests that the most simple inventions are signs of actual progress, and point back to an earlier state out of which he has emerged. The discovery of the oldest of man's works, either in the form of worked flints, earthen vessels, and of fire-hearths, do not carry us back to his beginning; if we would attain to a knowledge of this, it must be sought for in the remains of his own body, older than all his works.

We have as yet no data for determining the time or the order of his inventions. But of all his works thus far discovered, flint-implements are the most ancient, and earthen vessels the next. The invention of fire and cookery appears to have preceded that of pottery, the proof of the existence of the former being the oldest. The determination of how, and the period when, fire was first made available as an agent, would be one of the most important contributions to the history of the early progress of the human mind.

The shell-heaps on the St. Johns River, like those from the other parts of the United States, show that those who inhabited them were not, strictly speaking, primitive men. They had already made some progress in the useful arts, and however rude their instruments, these were nevertheless inventions, and such, too, as could only have been the result of experience extending through considerable periods of time. They not only used worked stone, bone and shell, but their pottery had passed out of the first and rudest stage into that of comely forms with outward ornament, and, as the table on the opposite page shows, exhibits some little variety in the composition of the materials.

For the purposes of comparison we have included in the enumeration, articles obtained from St. Johns Bluff, where the shell-heap is made up of salt-water species. The table shows that more than three-fourths, eighty per cent., of all the pieces were made of clay without the admixture of any other substance, and that when another substance was added,

it was most commonly palmetto fibre. The use of sand was almost exclusively confined to St. Johns Bluff, where, too, is found the most highly ornamented work, characterized by the most complex figures. The only pieces marked with the impression of a cord were also found at the same place. This kind of ornament was extensively used over the United States, as we have specimens from Illinois and Massachusetts, and has also been observed on the pots from tumuli belonging to the Pre-Roman period of Great Britain.* We have seen no evidence that, as has been frequently asserted, these markings indicate that the pots had been formed in nets. Although the meshes are often regular, there are no signs of knots at the point of crossing of the threads, which there certainly would have been if nets had been used. Traced pottery was confined almost wholly to Old Enterprise, the figures being made with a point, and consisting of combinations of straight lines. These were sometimes combined with indentations. We saw no specimens of pottery made in baskets, though frequently told that such are found. The absence of pounded shells, as one of the ingredients of their pottery, is worthy of notice, especially as shells were in daily use among the natives of the St. Johns.

LOCALITY.	MATERIALS.			SURFACE.				
	Clay.	Clay and Sand.	Clay and Veg. fibre	Plain.	Traced.	Plain Stamped.	Complex Stamped.	Marked with Cord.
Lake Harney,	106	0	0	8	2	90	0	0
Burial Mound do., . . .	38	0	2	32	1	7	0	0
Watson's Landing, . . .	62	0	15	67	0	10	0	0
Black Hammock,	210	0	0	142	0	68	0	0
Old Enterprise,	23	2	92	64	50	3	0	0
Old Town,	126	0	13	60	1	78	0	0
St. Johns Bluff,	27	28	0	14	1	16	18	12
Total number of pieces,	592	30	122	387	55	272	18	12

The plain-stamped pottery was universally distributed, but was most abundant at Lake Harney and Black Hammock,

* Sir John Lubbock. Prehistoric Times. London, 1865, p. 113.

and is characterized by square, oblong, or lozenge-shaped impressions, regularly arranged, the stamp being of sufficient size to make a large number of them at once, but very often the figures are confused in consequence of the instrument having been applied twice to the same region. In one case the apex of the spine of a *Paludina* had been used as a stamp. The complex figures on the pieces from St. Johns Bluff, consist of combinations of square, with more or less rounded or curved impressions, giving the whole surface an intricate series of markings, but which we were unable in any specimen found, to reduce to a definite plan. They, however, resemble in their general style the pottery described by Schoolcraft* as coming from the sea-coast, and remind one of Mexican forms.

The size of the vessels, as indicated by the curvature of the fragments, varied from between two and three to twelve inches. The more common kinds appear to have been either shallow like a common pudding-dish, or deep enough to be used as seething-pots, and both are figured in the illustrations to the *Brevis Narratio* of LeMoyne.†

Fig. 1, Pl. 10 (natural size), represents a rude attempt at ornament, consisting of two irregular parallel spiral lines starting from the same point. From Old Enterprise.

Fig. 2, Pl. 10 (natural size), also from Old Enterprise. In this, as was not unfrequently the case at the locality just mentioned, straight lines are combined with indentations made with a round point.

Fig. 3, Pl. 10 (natural size), represents one of the instances of complex figures from St. Johns Bluff. This was made either by one large complicated stamp, or by a series of different stamps, since none of the details are exactly repeated.

Articles of Shell and Bone. The natives of the upper portions of the river were in constant communication with the

*North American Indians, Vol. III, Pl. XLV.

†De Bry, Hist. Amer. Francforte ad Mœnam. Pars. 2da, pp. 4 and 5.

coast, and, as might be expected, carried marine shells into the interior, some of which were converted into useful articles, especially *Strombus gigas*, *Pyrula carica*, and *P. perversa*, the last acquiring a length of from twelve to fourteen inches.

Fig. 4, Pl. 10 (half natural size), one of the most common instruments, is made of a triangular piece cut from *P. carica*, so as to comprise a portion of the rostrum, serving as a handle, and a portion of the swollen part of the body, which is the useful part of the tool. The sides and apex are smoothed and rounded, while the base is regularly curved and ground to an edge like that of a gouge, but with the bevel on the inside. A specimen presented to me by Dr. H. P. Bowditch, and which he obtained at Old Enterprise, shows quite clearly that it was detached from the shell by first cutting a groove, and then breaking off the fragment. Length from 80 to 90 m. m., breadth from 60 to 70 m. m.

Fig. 5, Pl. 10 (half natural size), represents a species of *Pyrula*, with thick and heavy walls; the lip and nearly the whole of the rostrum are ground off, and a somewhat irregular oval hole with rounded edges is made between the first and second row of tubercles, and quite near to the mouth. Though such an instrument would give resonance to the voice, the position of the hole is not such as to adapt it most favorably to be used as a horn. It may, nevertheless, be the instrument which Bartram states was still in use when he visited the St. Johns, and with which, he says, "on one and the same day, early in the morning, the whole town is summoned by the sound of a conch-shell, from the mouth of the overseer, to meet in the public square," for the purpose of entering upon the work of cultivating the soil.*

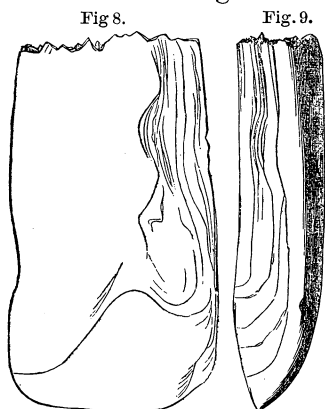
Fig. 6, Pl. 10 (natural size), is a portion of the rostrum of *Pyrula*, 60 m. m. in length, the two ends of which have been obliquely ground.

Fig. 7 (natural size), a piece of bone with a central cavity,

*Travels in Florida. Philadelphia, 1791, p. 512.

into which a hole has been drilled at each end. This was found at Horse Landing, midway between the top and base of the shell-heap, and was the only object found actually within the shell-heap, which was clearly the work of the human hand. Nearly similar forms are figured in the plates of the *Brevis Narratio*, as forming a part of the necklace worn by the natives.*

Fig. 8, front view; fig. 9, side view (natural size), represents an instrument made of shell, which, from the exterior markings seen in some, and the thick ridge on the inside in nearly all,



appears to have been cut from the borders of the mouth of *Strombus gigas*. Several of these were found, but all more or less broken. When whole the length was about 150 m. m., breadth from 50 to 60, and the thickness 25 to 30 m. m. The broad end is ground to a blunt edge like that seen in most of the stone chisels from the other



States, and the other as ground to a blunt point. The instrument closely resembles the shell-adze used by the Kingsmill islanders, specimens of which, with their handles attached, can be seen in the Smithsonian collections. One of the specimens has been twice perforated by a *Lithodomus*, and thus so far weakened as to lead to fracture. These perforations were undoubtedly made before the instrument was wrought. Its outer surface is largely bored by worms.

A large specimen of *Pyrula perversa*, from which the interior whorls had been broken out, was found at Blue Spring. Such as this were used as drinking horns, and

are mentioned by Le Moyne, though his figures, drawn from memory, as might be expected, do not agree with this or any other species.

Besides the implements of bone already mentioned, a portion of the radius of a bear, which had been divided by cutting a groove around the outside and breaking the rest, was found at Old Town; and Mr. Bowditch gave me the antler of a deer which had been similarly treated, and which he found at Enterprise.

Articles of Stone. The collection of stone implements was quite small, only twenty-five or thirty pieces, nearly all of which were picked up on the shores near Old Enterprise, only a few being actually dug from the mounds. A single chisel of the ordinary form, and with a remarkably sharp edge, was found at Old Town, but all the other articles were either arrow or spear-points, and none of them had unusual shapes. No pipes or fragments of them were found at any place.

Fig. 10, Pl. 10 (half natural size), represents the rude attempt at an arrow-head, mentioned on p. 403, and found by Mr. Peabody under the lowest portion of the shell-heap at Horse Landing.

We will add to the above two pieces of worked shell, both of which were, however, taken from the burial-mound at Black Hammock, near the shell-heap, but were undoubtedly in common use among the natives.

Fig. 11, Pl. 10 (natural size), is an ornament cut from that portion of a *Pyrula*, namely, the suture, where one whorl joins the preceding, and is bent to nearly a right angle; the length of the upright portion is 45 m. m., and the disk at the bottom measures 31 by 24 m. m.

Fig. 12, Pl. 10 (natural size), a disk of shell, 18 m. m. in diameter, and 5 m. m. thick, with a hole drilled through the centre. A similar one is figured by Schoolcraft.*

Remains of Animals. The subjoined table gives a com-

*Notes on the Iroquois. Albany, 1847, p. 243.

plete list of the different kinds of animals, indicated by the bones found in the different mounds. The species most commonly met with are the Deer (*Cervus Virginianus*), the Terapin (*Emys Floridana*), Soft-shelled Turtle (*Trionyx ferox*) and the Alligator (*Alligator Mississippiensis*). The condition of the bones in many instances, particularly those from Old Enterprise and Horse Landing, indicated that they had been long buried, inasmuch as they had lost nearly all their organic matter, and when exposed to heat scarcely changed their color. In many instances they were incrustated with a deposit of lime, and had the shells in which they were embedded cemented to them. The bones of birds are quite rare, even those of the wild turkey and of the various species of ducks, which in the winter frequent the rivers and lakes in immense numbers. Of fishes, the species most commonly represented are the gar-pikes (*Lepidosteus*), and a cat-fish (*Pimelodus*).

In the illustrations to the *Brevis Narratio* of LeMoyne, Pl. XXIV represents a fire over which is built a frame, and on this, exposed to heat and smoke, are several animals, among which can be recognized the deer, a small mammal, the mouth of which resembles that of the opossum, an alligator, an eel or a snake, and several species of fish. Several Indians are standing near, one fanning the fire, and another holds an alligator under his arm. On Pl. XXIII, natives are represented carrying food in baskets, one of which contains a deer, a fish, and an alligator. This is quite too large a load for one basket, and too much importance must not be attached to these plates, since they were drawn from memory, but they may be taken as an indication of what the kinds of food were. In the text, the writer states that they "ate freely of the flesh of the alligator, which is white and clean, and which we should have eaten often had it not been too redolent of musk."* This objection we have found from personal experience to be a valid one.

* Ibid., p. 5.

SPECIES OF ANIMALS FOUND IN THE SHELL-MOUNDS.	Lake Harney.	Watson's Landing.	Black Hammock.	Enterprise	Blue Spring.	M'd above Osceola.	Oldtown.	Horse Landing.
Deer, <i>Cervus Virginianus</i> ,	*	*	*	*	*	*	*	*
Bear, <i>Ursus</i> ,								
Raccoon, <i>Procyon lotor</i> ,		*		*	*		*	
Opossum, <i>Didelphys</i> ,				*				
Turkey, <i>Meleagris gallopavo</i> ,						*	*	
Birds, not known,	*	*					*	*
Terrapin, <i>Emys Floridana</i> ,	*	*	*	*	*		*	
Soft-shelled Turtle, <i>Trionyx ferox</i> ,	*	*	*	*		*	*	*
Species of Turtle not known,	*					*		
Alligator, <i>Alligator Mississippiensis</i> ,		*	*	*		*	*	*
Catfish, <i>Pimelodus</i> ,	*					*		
Gar-pike, <i>Lepidosteus</i> ,	*			*		*	*	*
Fish, not known,	*			*				

That the animals of the shells which form the materials of the mounds were used as food, there seems to be no reasonable doubt. Unios are known to be edible, and, almost exclusively, form the shell-heaps on the borders of other rivers as the Ohio,* the Tennessee,† the Concord, etc.‡ We are not aware of any evidence that Ampullarias and Paludinas have been so used elsewhere than in Florida, but their association with pottery, and charcoal, and the bones of edible animals, seems to be decisive. If the inference we have drawn be correct, then it follows that the animal food of the ancient inhabitants of Eastern Florida was very largely derived from these species, and especially the Paludinas, since the remains of fish, turtles, alligators, and deer, form so insignificant a portion of the whole heap.

In view of the vast number and size of the shell-heaps now known to be scattered along the Atlantic coast,§ and the vast quantities of shells which compose them, it is quite clear that the aborigines must have depended largely upon shell-fish for food. In fact such was obviously the case with the early inhabitants of the old world as well as new. Of the

* Atwater, *Archæologia Americana*, Vol. I, p. 226.

† Brinton, *Smithsonian Publications*, 1866, p. 356.

‡ J. Wyman, *Proceedings of Boston Society of Natural History*, Vol. XI, p. 243.

§ Dr. Joseph Leidy, *Proceedings of Academy of Natural Sciences*, 1866, has described the shell-heaps at Cape Henlopen, and should have been cited in our communication in the *NATURALIST* for December, 1867, but at that time we had not seen it.

extent to which vegetable substances were made use of, the shell-heaps offer no evidence ; but it seems certain, that until the bow and arrow, the trap or the net were invented, the animal food must have of necessity been derived from such species as could most easily be obtained, and among these the shell-fish and the more sluggish reptiles would first attract attention.

III. AGE.

No satisfactory data were found for determining the age of the shell-heaps. The appearance of great age which some of them have, as at Horse Landing and Old Enterprise, is important ; the same may be said of the fact that the bones embedded in them had lost nearly all their organic matter, and at both of these places were incrustated with calcareous deposits, in some instances forming a conglomerate. The time required for these last results is not necessarily very great, but the organic matter of bone is destroyed very slowly, and is largely present in those of some of the extinct animals. We have obtained a larger quantity of animal matter from the bones of the Mastodon than from those of the deer at Old Enterprise.

The most trustworthy records are found in the forest trees growing upon the mounds. These give us a minimum age with some approach to accuracy. The live-oaks (*Quercus virens*) are not only long-lived, attaining an age of many centuries, but their wood is the most durable of all the forest trees of the United States. One of these, which had fallen from the effects of age, lies upon the top of a mound in the woods near Blue Spring, and measures five feet and six inches in diameter. As it was on the summit of the mound, it could not have begun to grow until the mound was nearly or quite finished ; it *may* have begun many years later. It had been dead for a long time ; its bark, all of the small and most of the large branches had disappeared. These trees after they are dead still remain erect for many years. Some

of them girdled more than thirty years since, can still be seen standing firmly in the Indian-old-fields. It certainly would not be extravagant to say that the tree in question had been dead more than half a century. Fragments of pottery were found in the earth and shells contained in the upturned roots of this tree, and on sinking a pit in the place formerly covered by the upright trunk, others were found at a depth of from two to three feet. We had neither the tools nor the aid for making a section of this trunk to count the number of annual rings. Through the kindness of Commodore John Rogers, of the United States Navy, we have received a section from a tree nearly a century and a quarter old, and find that at the beginning of the second century there are about fifteen rings to the inch. In later periods of the life of the tree they would of course be more numerous. Assuming fifteen to the inch as the average, a half diameter of thirty-three inches would give 495 rings, or nearly five hundred years; if to this we add fifty years for the time since the tree died, there can be no doubt that the mound was substantially as complete as now more than a century before the discovery of the country.

We know of no data based on the quantity of materials of which the mounds were formed, on which to estimate the time required to build them; to this end, it would be necessary to know the number of persons occupying the place, and the daily or annual consumption of food. If, as is the case of mounds built up in the swamps, they were resorted to only by those who could find camping conveniences upon them, the number must necessarily have been very small.

The later aborigines had no traditions with regard to these shell-heaps, or the burial-mounds which are sometimes near them. They ascribed them to a former race. Florida, however, has been more than once overrun by exterior tribes, and the absence of traditions might in this way be accounted for, since these would be likely to be lost with the change of inhabitants. Under the most favorable circumstances tradi-

tions form an uncertain basis for history. If, therefore, on the one hand there is no proof of great antiquity, it may still be claimed that there is nothing inconsistent with it, and that the appearances of the mounds, and facts connected with them, largely favor it.

IV. ST. JOHNS BLUFF.

It was the special object of this paper to describe only fresh-water shell-heaps, but as we have visited two deposits consisting of marine species, chiefly oysters, we will add a few words with regard to them, especially the above-mentioned locality. The one at Fernandina, on the northerly end of Amelia Island, has already been described by Dr. Brinton,* who has given the most satisfactory proof of its human origin, and of other similar deposits on the Atlantic and Gulf coasts of Florida. The result of our own observations at Fernandina are confirmatory of what Dr. Brinton has recorded, and afford some additional evidence from the earthworks thrown up during the rebellion, and the mounds over the soldiers' graves in the rear of Old Fernandina, in making both of which, portions of the shell-heaps were uncovered, and the contents, similar to those previously noticed, exposed.

St. Johns Bluff has a twofold interest, for it was not only a favorite resort for the Indians, but was the scene of two of the most tragic events in the early history of the continent.† It is situated on the right bank of the river, and about five miles from the mouth. Like all the adjoining shores, it is composed of a fine yellowish silicious sand. It is about forty feet high on the front, and at the eastern end rises quite

*Floridian Peninsula, p. 177.

† It was here that the French, under Jean Ribault, in 1564, built Fort Caroline with a view to establish a Huguenot colony, which in less than eighteen months Menendez, with the purpose of impeding the progress of Protestantism captured, put the garrison to the sword, and set up the inscription, "not as to Frenchmen, but as to Lutherans." Two years later Dominique de Gourgues avenged the atrocity, by retaking the fort, killing the captives, leaving behind attached to a tree another inscription, "not as to Spaniards or mariners, but as to traitors, robbers, and murderers." See Parkman, *Pioneers of France in the New World*. Boston, 1865, p. 157.

abruptly out of a marsh, and to the westward, *i. e.* up the river, descends at first by a rapid, then a gentle slope, which merges into a nearly level plain, backed by the thickly-wooded hills; beyond this is a marsh, which, still farther to the westward, is bordered by a creek.* The base of the bluff is washed by a swift current at every tide, so that it is constantly undermined, and is rapidly disappearing. Earthworks thrown up on top during the rebellion have already begun to fall. I was told by a man living near by that an oleander tree, which I saw lying at the water's edge to the westward of the bluff, a few years since was thirty feet from the shore in the middle of a garden.

At present the bluff itself must greatly differ from what it was when the French came, and it is highly probable that more of it has been destroyed than remains. The site of Fort Caroline has not been identified, and has probably disappeared. The bluff presents a front of clear sand, is overgrown with trees except where military works were thrown up, and beneath the vegetable mould, a few inches thick, is a layer of oyster shells, with a very slight admixture of sand, extending from two to three hundred feet along the more easterly portion, and varying in thickness from a few inches to three feet. A second and much thinner layer is seen to the westward, where the land rises only eight or ten feet above the water. It is not improbable that the two deposits were originally connected, the intervening portion having been washed away. Fragments of pottery which have fallen from the banks are scattered along the whole shore in front of these deposits, and on examining fresh sections made by the falling of the bluff, and also in making excavations in undisturbed portions, similar fragments were found in place, and so there can be no doubt that the shells and pottery were simultaneously deposited. After careful search no flint or other implements were found during my visit, either

*Mr. Parkman's description of St. Johns Bluff, in the work already cited, is admirable for its portrayal of the general landscape as well as the individual details.

in the bluff itself or along the shore, neither were the bones of edible animals found mingled with the shells. Flint implements have, however, been obtained in considerable numbers, and an arrow-head was given me by a negro, who had picked it up near by. The various excavations for military purposes, revealed the existence of shells several hundred feet to the rear of the present front of the bluff, and beyond the creek to the westward of the marsh is a farm, where pottery and shells may be seen loosely scattered over a tract of many acres in extent, wherever the plough has turned up the soil.

The shell-mounds of the sea-coast, as well as of the interior, seem to have passed almost unnoticed by the early writers on Florida. Dr. Brinton quotes a single passage, the only one met with by him relating to the subject, from Cabeza de Vaca, in which it is stated that the houses of the Indians were "built of mats on heaps of oyster shells."*

ENUMERATION OF THE SHELL-HEAPS VISITED.

Besides those mentioned in the following list, there are many others not visited by the writer, some of which are said to be of even longer dimensions than any seen by him.

The localities are mentioned in the order in which they stand on the river, beginning with those nearest the sources.

1. Rattlesnake Hammock, on Salt Creek, right bank, and near the union of the creek and the St. Johns.

2. Solee's Landing, right shore of Lake Harney.

3. King Phillip's-town, left bank of the St. Johns, a mile below the outlet of Lake Harney. There is a large burial-mound near this locality.

4. Another shell-heap, one mile below preceding.

5. Watson's Landing, right bank between Lakes Harney and Jessup.

6. A mound one mile above preceding, on the same side of the river.

7. Black Hammock, left bank, just above the outlet of Lake Jessup. There is a small burial-mound here.

8 & 9. Two mounds on the right bank and below the preceding, but separated from the river by a large lagoon.

10. Spear's Landing, about five miles above Lake Munroe, left bank. There is a burial-mound at this place.

11. Buzzard's Roost, left bank, near entrance to Lake Munroe.

12. Doctor's Island, right shore of Lake Munroe, above Enterprise.

*Floridian Peninsula, p. 179.

13. Old Enterprise, right shore of Lake Munroe.

14. Outlet of Lake Munroe, right bank.

15. Wekiva, right bank.

16. Blue Spring, right bank.

17 & 18. Two mounds in the woods below Blue Spring, with a wide swamp between them and the river. A third but small mound was found about a half mile from them.

19. Mound above Hawkinsville, left bank formerly, and still ought to be called Osceola, or, as Dr. Brinton writes the name, Ass-se-he-ho-la, Rising Sun, after the celebrated chief who was prominent in the Florida War.

20. Mound below preceding, left bank, having the usual appearance of the other shell-heaps, but in which we failed to find signs of its artificial origin.

21. Old Town, left bank, seven miles below Hawkinsville.

22. Small mound in the woods in the rear of the preceding.

23. Mound above the outlet of Lake Dexter, left bank.

24. Mound below the outlet of Lake Dexter, right bank.

25. Fort Butler, left bank.

26. Volusia, right bank.

27. Rope's Island, right bank, entrance of Lake George.

28. Drayton's Island, now Rembrandt's Island, at the outlet of Lake George, left bank.

29. Horse Landing, right bank, eight miles above Palatka.

30. Palatka, left bank, one hundred miles from the mouth of the river.

31. St. John's Bluff, right bank, five miles from the mouth of the river.

32. Old and New Fernandina, at the northern end of Amelia Island.

THE POTATO-MOULD.

BY JOHN L. RUSSELL.

MOULD and mouldiness are two words with which every one is familiar, but few are aware how numerous and diversified are the forms under which the little plants these words designate occur, and to what extent is the mischief they occasion, or know much of the utility in the plan of nature they sustain.

The science of botany as such does not date back very far, and in its place and prior to its existence, all vegetable growth was regarded with a superstitious, and in most cases